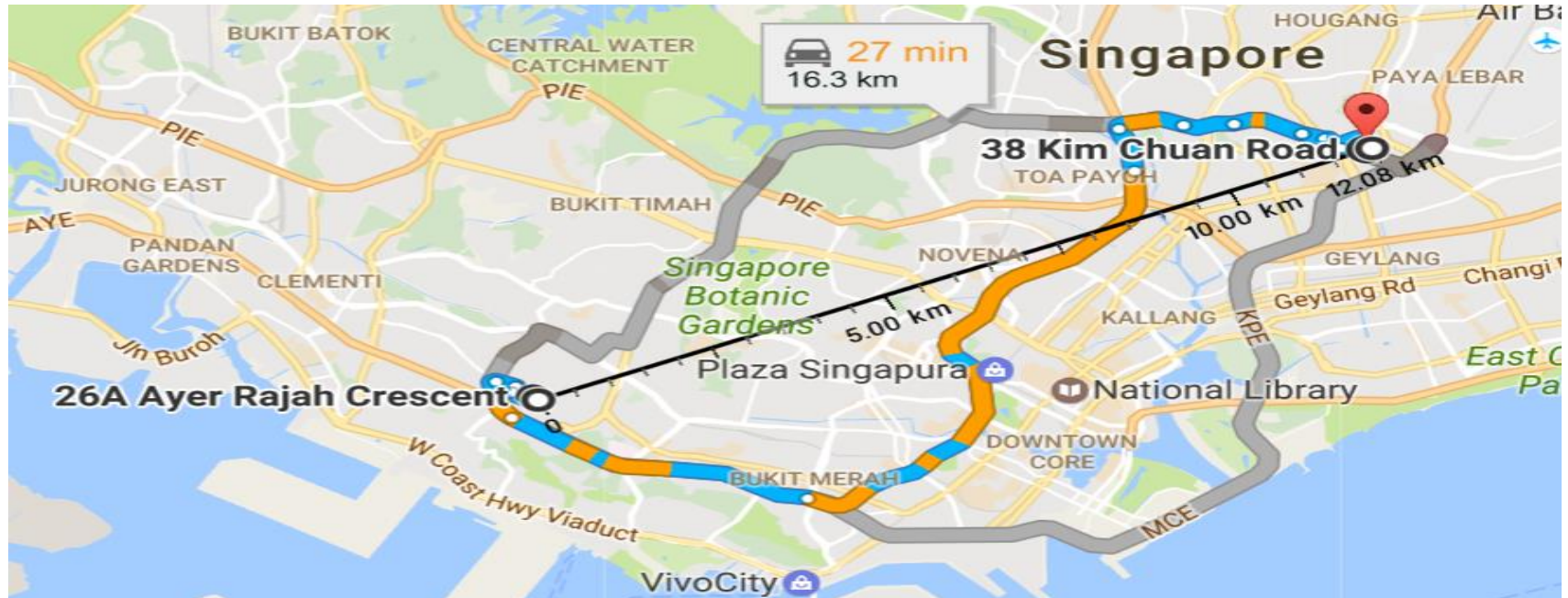


Exchange Connectivity to APEX

APEX Technology

APEX has two data centers geographically separated in Singapore:

1. Equinix SG3 – Primary Site: 26A Ayer Rajah Crescent
2. Singtel KC2 – Disaster Recover Site: 38 Kim Chuan Road



1 One City, Two DCs

- Primary DC: SG3 provided by Equinix (largest in Asia-Pacific) located at West of SG;
- Secondary DC: KC2 provided by Singtel located at East of SG;
- Full TVRA compliance.

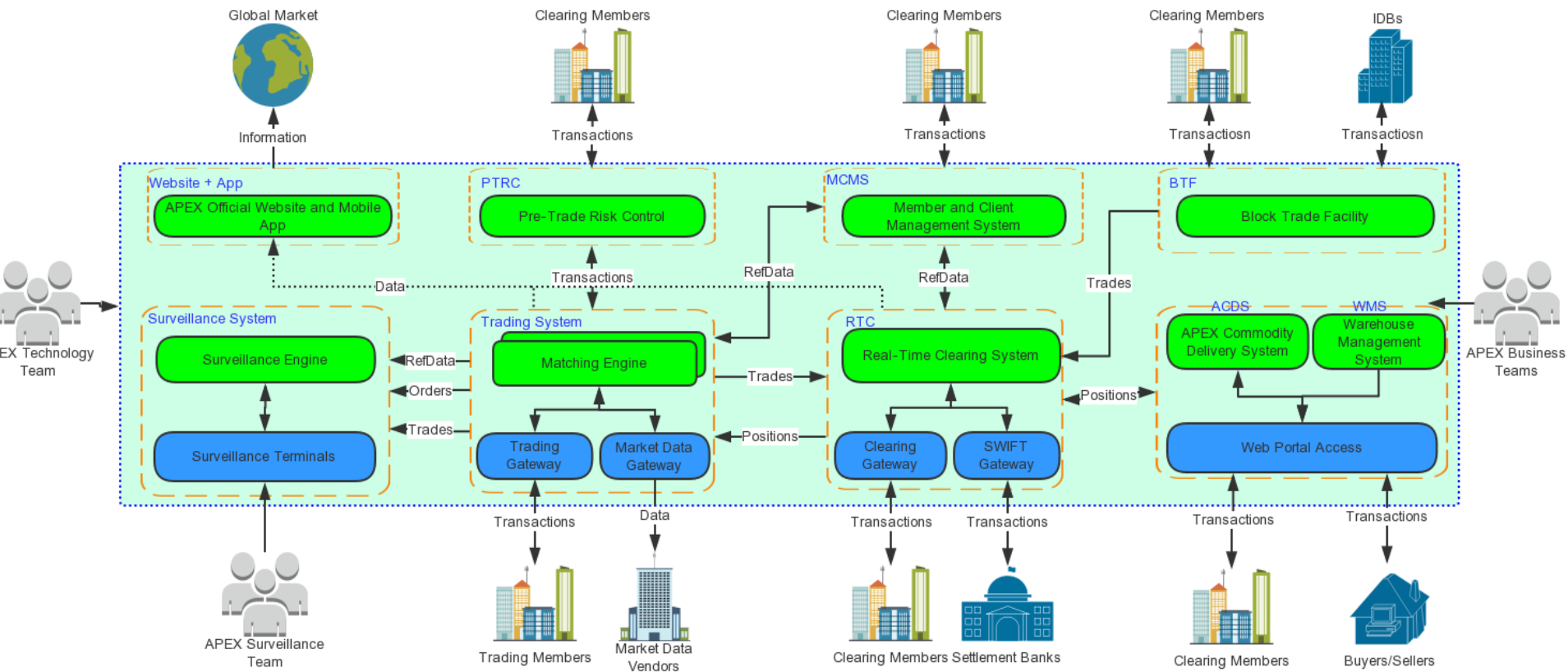
2 High Reliability

- Both DCs are Tier-3, highest standards in SG;
- Both DCs are built in flood- and earthquake- free zones;
- All critical devices are full redundantly deployed and no single-point-of-failure.

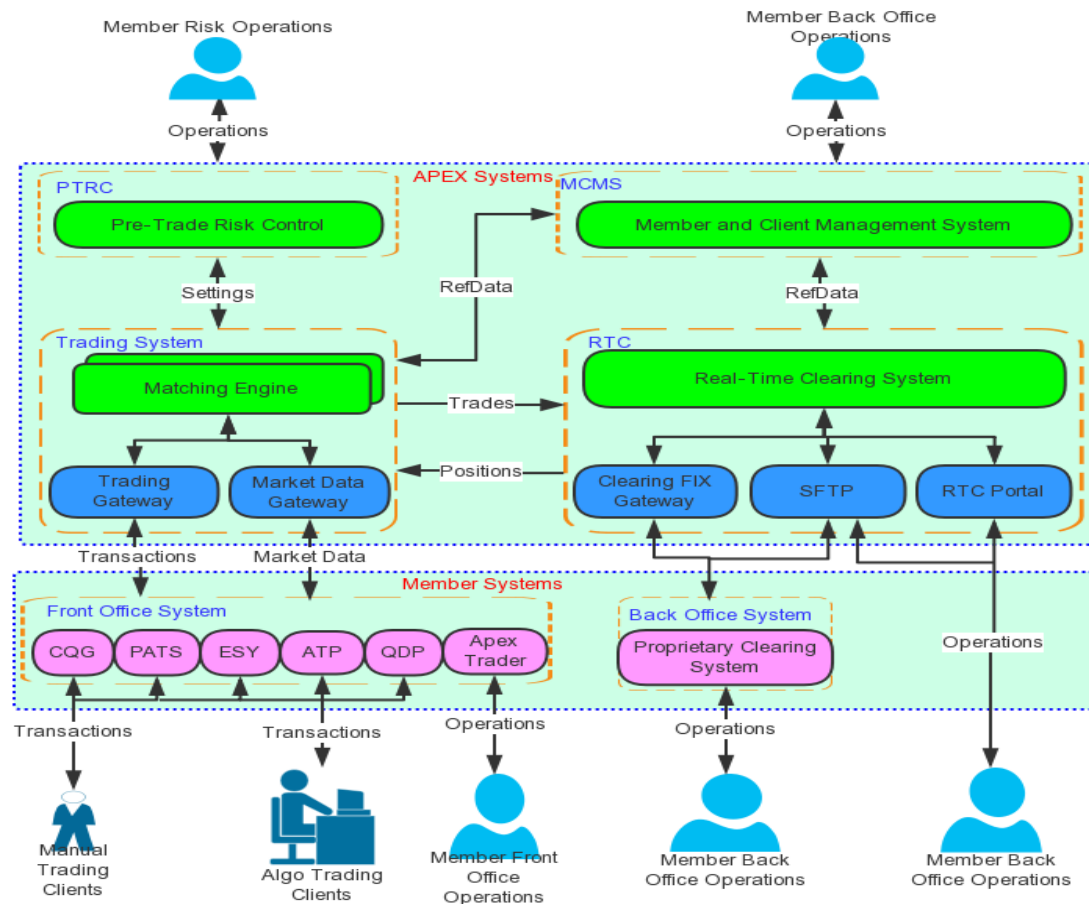
3 All-weather Monitoring

- DC vendors provide 7x24 monitoring and alerting;
- APEX technology team conducts all-weather in-house monitoring;
- DC IT operations conforming to ITIL standards.

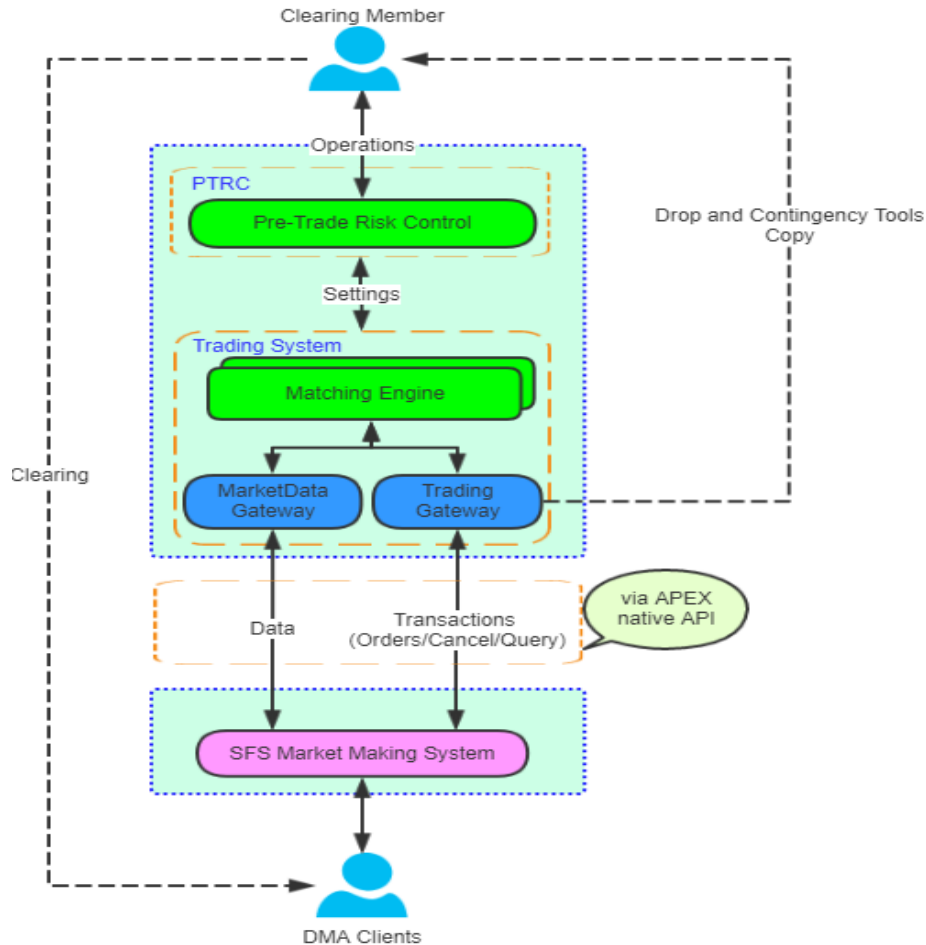
Overall Architecture



Major System Flow with Members



- Consent from Member
- Conformance Test at APEX
- Apply Seat ID and Market Data Subscription
- Clearing Member to set PTRC parameters



APEX to Provide:

- 1) Trade History Report
- 2) Listed Contract Report
- 3) Open Position Report
- 4) Margin Summary Report
- 5) Daily Fee Report
- 6) Financial Summary Report
- 7) Margin Call Report
- 8) Close Price Report
- 9) Cash Settlement Futures Report

Members can download these reports from APEX Clearing System or specified SFTP

Clearing Member to Submit:

- 1) Open Position Report
- 2) Large Position Report
- 3) Position Accountability Report

Members can upload these reports to specified APEX sFTP.

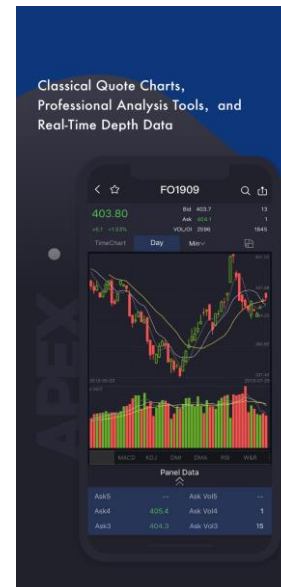
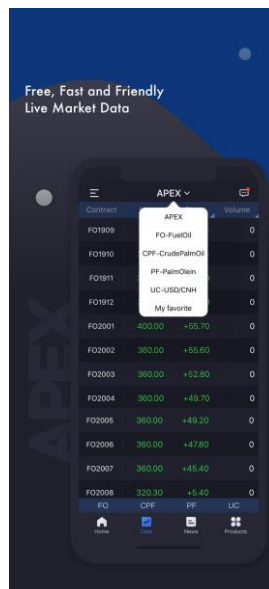
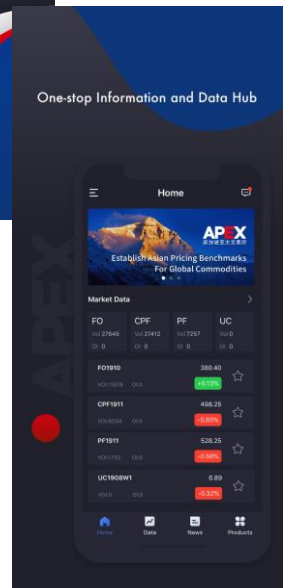
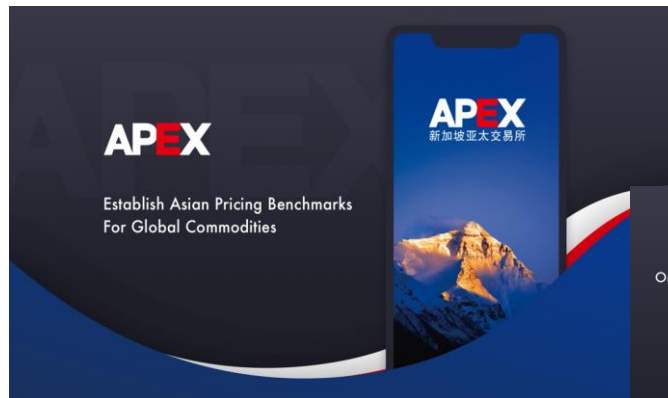


More on the road.....

Bloomberg



More on the road.....



For your easy retrieval, all connectivity documents, including Trading API Specs, Back-Office Integration and Network Connection Setup Guidelines are available on GitHub, visit the Url below to retrieve.

<https://github.com/apex-dev/connectivity>

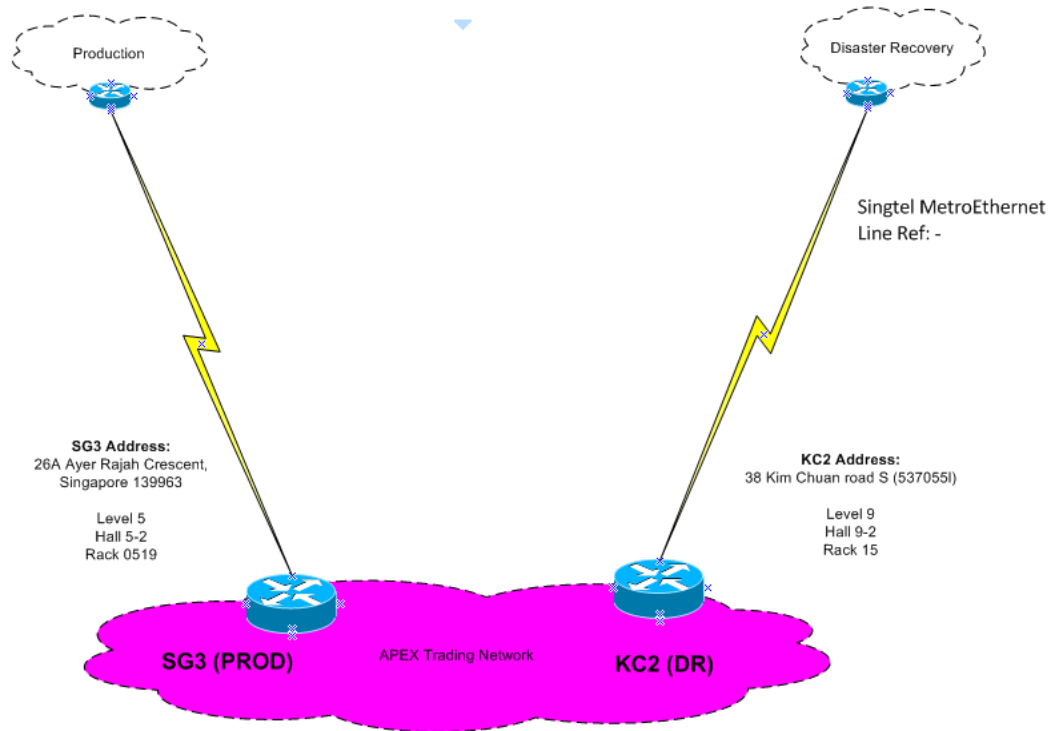
GitHub



Objective

1. APEX Data Centre
2. Network Provider / Internet Service Provider List
3. Supported Connectivity Option
4. Non-supported Connectivity Option
5. FAQ

Brokerage Connection to APEX



APEX has no preference on which Network Service Provider our client/members choose as long as the design fits APEX's supported topology.

The list below provided is some ISP we have work with.

- Singtel
- Starhub
- China Telecom Singapore
- China Unicom
- British Telecom (BT) (BT Radianz)
- Colt Technology Services (PrizmNet)
- Equinix (Crossconnect Only SG1/SG3)
- IPC*

* On boarding in progress

Notes:

- APEX Data Centre is active-active. Which means you will be able to connect into apex services from either SG3 or KC2.
- APEX require connection coming into APEX to do a Source NAT (To Be Assigned by APEX)
- APEX Require their members to take care of their internal routing for failover and/or DR.
- **APEX will only allow the use of IPSEC site to site VPN in SG3 for only 3 month.**
 - **APEX will not be liable to any lost of data or connectivity during this period.**
- **All prices in this document are only a estimate. And does not include crossconnect charges at customer's own DC. For actual Pricing approach or ISP/NSP.**

Duel Point to Point

Note: Prefer to use Singtel as secondary circuit as you will be able to save on Crossconnect in KC2.

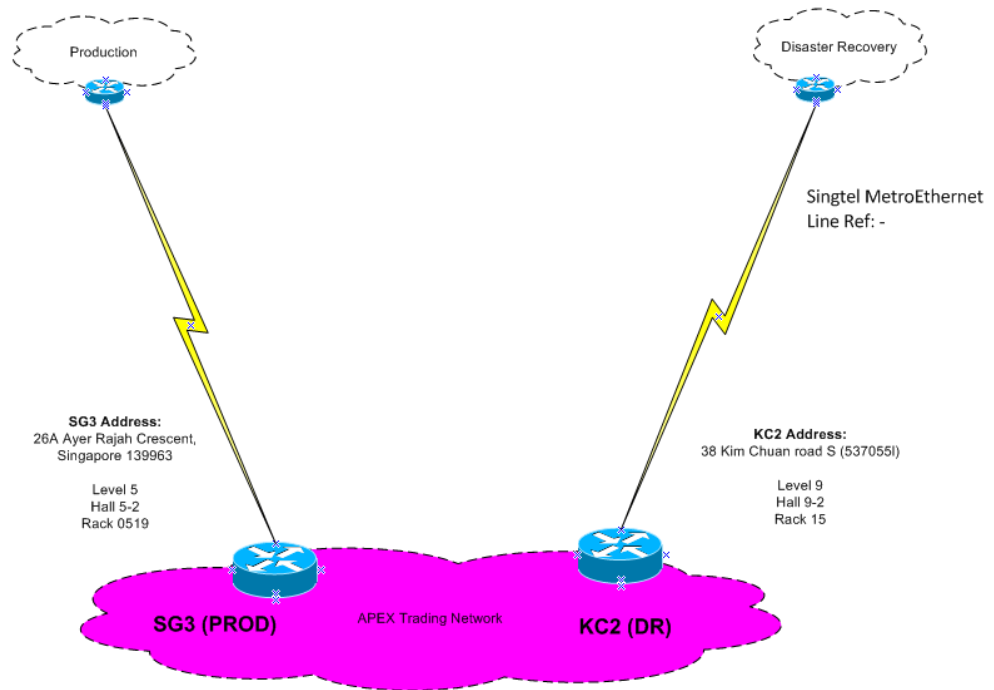
Estimated cost for 2M x 2

- 2M Low Latency SGD1000
- SG3 Crossconnect
 - OTC:SGD455 MRC: 396
- 2M Circuit to KC2 SGD 800
- Crossconnect in Customer End
- Crossconnect in KC2 (Non SingTel circuit)

Estimated Total Per month: SGD 2200

Estimated One Time charge: SGD 1500 to 2000

Connection to APEX



Supported Connectivity Option

Hybrid

Note: IPSEC Site to Site only supported in KC2.

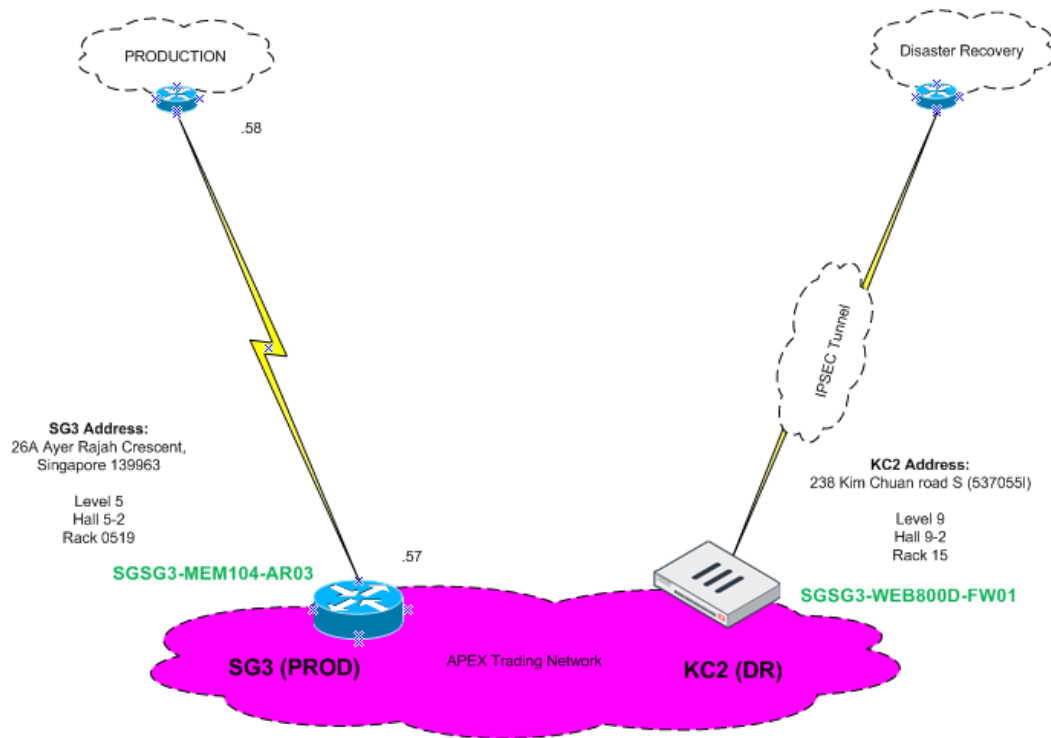
Estimated cost for 2M x 2

- 2M Low Latency SGD1000
- SG3 Crossconnect
 - OTC:SGD455 MRC: 396

Estimated Total Per month: SGD 1500 - 2000

Estimated One Time charge: SGD 500 to 1000.

Hybrid Connection to APEX



Supported Connectivity Option

Crossconnect

Note: **Only with Customer's / Members has a presence in SG1 or SG3.** The primary circuit will be a Crossconnect into APEX rack.

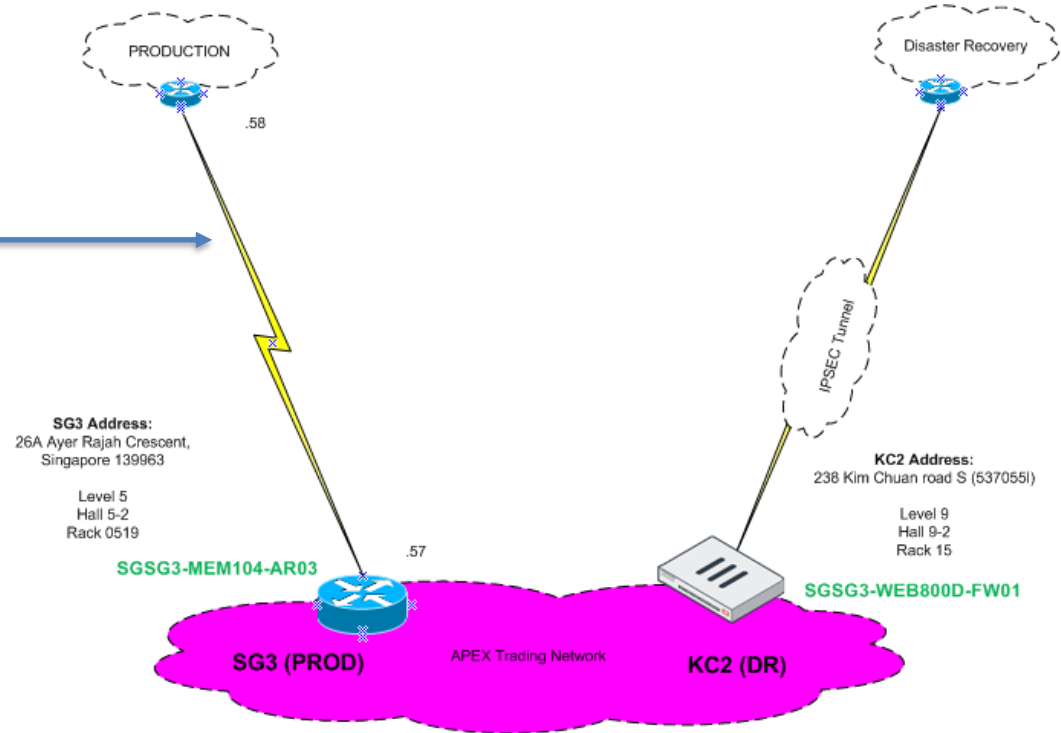
Estimated cost for 1G Fibre LC

- SG3 Crossconnect
 - OTC:SGD455 MRC: 396

Estimated Total Per month: SGD 400

Estimated One Time charge: SGD 500.

Hybrid Connection to APEX



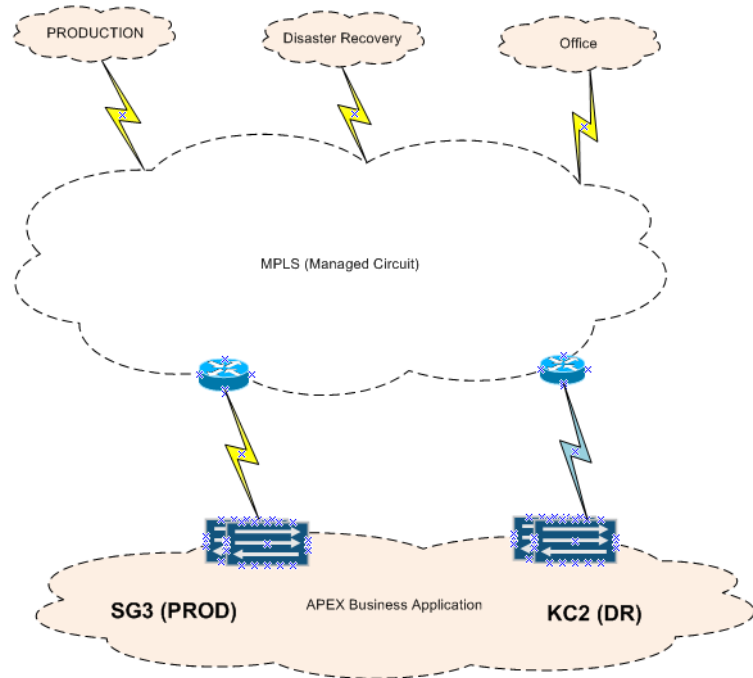
Supported Connectivity Option

MPLS / Financial Extranet

Note: APEX is on boarded into BT's Radianz Network and COLT Prizmnet.

Estimated Cost: Please request quote from NSP.

Financial Extranet Connection to APEX



Non-supported Connectivity Option IPSEC Site to Site for SG3 / Production Traffic

APEX Strictly Prohibit the use of IPSEC Site to Site vpn Via the public internet for production traffic into any of apex DC.
The only exception will be given for Disaster recovery or backup circuit.

In any circumstances, APEX will not be responsible for any lost when using Site to Site VPN via the internet. This is due to the nature of the public network.

Qs: My production DC is in SGX Colo @ Keppel Digihub. What are my option in connecting into apex?

Ans: We currently do not have a POP in SGX Colo in Keppel Digihub at this point of time. We recommend you to come in via point to point or MPLS.

Qs: I would like to use point to point to connect to APEX but my ISP/NSP does not provide cross connect in SG3. Can we purchase Crossconnect from APEX?

Ans: Yes. You can purchase cross connect with APEX. APEX will help facilitate this request.
You will also need to fill up APEX Technology Service Application form.

Email the form to infra-support@asiapacificex.com

<Insert the form and T and C>

Qs: Is it a must to use Singtel circuit for connectivity into KC2?

Ans: No. We recommend SingTel only on the basis that they will not charge for Crossconnect in their own DC (KC2).

Qs: What are the Pros and Cons of using MPLS / Financial Extranet service?

Ans: The extranet service are recommended for those that are connecting from overseas and/or does not have IT staff skillset to manage the network.

Pros: Easy to manage. Auto failover in case of failure or DR. Cost is also slightly lower.

Cons: Higher in latency compared to Point to Point Network.

Thank You!